



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,735	12/28/2000	Vishweshwara Mundkur	21676-05877 (VE-001)	7258

758 7590 06/21/2004

FENWICK & WEST LLP  
SILICON VALLEY CENTER  
801 CALIFORNIA STREET  
MOUNTAIN VIEW, CA 94041

EXAMINER
----------

HAN, CLEMENCE S

ART UNIT	PAPER NUMBER
----------	--------------

2665

DATE MAILED: 06/21/2004

10

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/750,735

Applicant(s)

MUNDKUR ET AL.

Examiner

Clemence Han

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. Initialed and dated copies of Applicant's IDS form 1449, Paper No. 6 and 9, are attached to the instant Office action.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1–16 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang et al. (US Patent 5,615,237).

In regarding to claim 1 and 8, Chang teaches an apparatus for simultaneously determining a respective frame alignment in each of a plurality of channels, the apparatus comprising: means for simultaneously storing a frame alignment state for a plurality of frame bit candidates for each of the plurality of channels (Column 2 Line 63–64); means for receiving data from the plurality of channels (Column 4 Line 17–32); means for updating the stored frame alignment state for each of the plurality of frame bit candidates in accordance with the received data (Column 7 Line 30–36); and means for declaring the respective

frame alignment in accordance with the updated frame alignment state for a certain one of the plurality of frame bit candidates for each of the plurality of channels (Column 3 Line 1–4).

In regarding to claim 2 and 9, Chang teaches the updating means includes: means for retrieving the frame alignment state for certain of the frame bit candidates associated with the received data (Column 7 Line 2–6); means for comparing the received data with expected framing data based on the retrieved frame alignment states (Column 2 Line 65 – Column 3 Line 1); means for advancing the retrieved frame alignment states upon a successful comparison of the received data with the expected framing data (Figure 5); means for withholding advancing of the retrieved frame alignment states upon a failed comparison of the received data with the expected framing data (Figure 5); and means for replacing the retrieved frame alignment states with the updated frame alignment states in the storing means (Column 7 Line 7–12).

In regarding to claim 3 and 10, Chang teaches the withholding means is operative to reset the retrieved frame alignment states to less advanced states in accordance with current frame alignment strengths indicated by the retrieved frame alignment states (Figure 5).

In regarding to claim 4 and 11, Chang teaches means for polling the plurality of channels for frame alignment requests (Column 6 Line 21–38); and means for controlling the operation of the receiving means, the updating means and the declaring means for certain of the plurality of channels based on the polled frame alignment requests (Column 4 Line 48–52).

In regarding to claim 5 and 12, Chang teaches each of the plurality of channels includes an inline framer 22, the inline framer comprising: means for generating the frame alignment request (Column 4 Line 53 – Column Line 8); and means for processing channel data using an old frame alignment simultaneously while the respective frame alignment is being determined (Column 5 Line 9–39).

In regarding to claim 6 and 13, Chang teaches the respective frame alignment for a first one of the plurality of channels is in accordance with a first framing scheme, and wherein the respective frame alignment for a second one of the plurality of channels is in accordance with a second framing scheme, the first and second framing schemes both being one of DS 1 SF, DS 1 DDS, DS I SLC-96, and ITU-T 6.704 based EI (Column 6 Line 31–34).

In regarding to claim 7 and 14, Chang teaches the respective frame alignment for a first one of the plurality of channels is in accordance with a first

framing scheme, and wherein the respective frame alignment for a second one of the plurality of channels is in accordance with a second framing scheme, the first and second framing schemes each being a different one of DS 1 SF, DS I DDS, DS I SLC-96, and ITU-T 6.704 based EI (Column 6 Line 31–34).

In regarding to claim 15, Chang teaches an apparatus, comprising: a frame alignment engine 43 coupled to a bus for commonly receiving data from a plurality of channels, the received data from each of the plurality of channels including a framing pattern embedded at a frame bit offset with respect to an arbitrary starting bit of a stream of data respectively associated with each of the plurality of channels (Column 1 Line 29 – Column 2 Line 11); a memory 102 coupled to the frame alignment engine, the memory having a plurality of channel state entries respectively corresponding to the plurality of channels, each of the channel state entries including a counter referenced to the arbitrary starting bit, the memory further having a plurality of data state entries for each of the plurality of channels, the plurality of data state entries respectively corresponding to a plurality of frame bit candidates, the frame alignment engine being responsive to data received from a requesting one of the channels so as to retrieve the counter for the requesting channel, and to retrieve certain of the data state entries corresponding to the received data from the requesting channel based on the counter (Column 2 Line 59

– Column 3 Line 4); and a state machine 122 coupled to the frame alignment engine, the state machine including a comparator that is adapted to compare the data received from the requesting channel with the framing pattern and to update the certain data state entries based on the comparison (Figure 5).

In regarding to claim 16, Chang teaches each of the plurality of channels includes an inline framer 22, the inline framer comprising: a frame register 112 for storing an old frame bit offset; an out of frame detector coupled to the frame register for processing the respective stream of data using the old frame bit offset simultaneously while the respective frame bit offset is being determined (Column 5 Line 9–39).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to the frame alignment in general.

U.S. Patent 6,331,988 to Marengo et al.

U.S. Patent 6,594,327 to Radi

U.S. Patent 5,528,579 to Wadman et al.

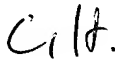
U.S. Patent 6,442,163 to Chopping


JP Patent 05030065 to Sato

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Clemence Han whose telephone number is (703) 305-0372. The examiner can normally be reached on Monday-Friday 8 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Clemence Han  
Examiner  
Art Unit 2665

  
HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600